

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
6 May 2004 (06.05.2004)

PCT

(10) International Publication Number
WO 2004/038697 A1

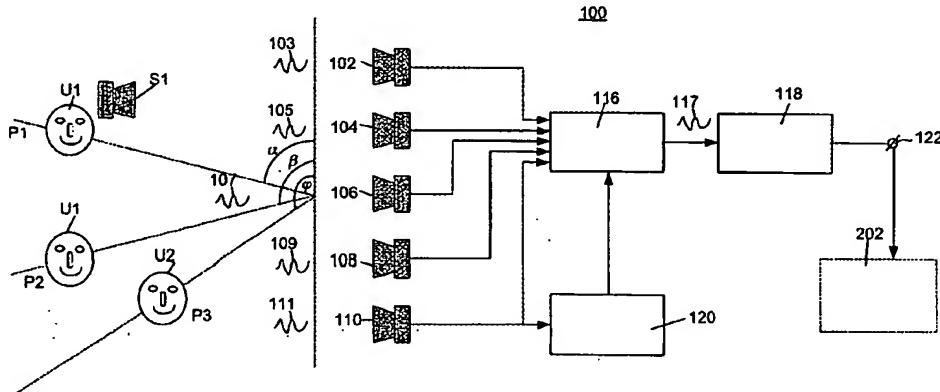
- (51) International Patent Classification⁷: **G10L 21/02**
- (21) International Application Number:
PCT/IB2003/004203
- (22) International Filing Date:
22 September 2003 (22.09.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
02079421.0 23 October 2002 (23.10.2002) EP
- (71) Applicant (for all designated States except US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): VIGNOLI, Fabio [IT/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (74) Agent: GROENENDAAL, Antonius, W., M.; Philips Intellectual Property & Standards, Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GI, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PI, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GI, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG,

[Continued on next page]

(54) Title: CONTROLLING AN APPARATUS BASED ON SPEECH



WO 2004/038697 A1

(57) **Abstract:** The speech control unit (100) comprises: a microphone array, comprising multiple microphones (102, 104, 106, 108 and 110) for receiving respective audio signals (103, 105, 107, 109 and 111); a beam forming module (116) for extracting a clean, i.e. speech, signal (117) of a user (U1), from the audio signals; a keyword recognition system (120) for recognition of a predetermined keyword that is spoken by the user (U1) and which is represented by a particular audio signal (111) and being arranged to control the beam forming module, on basis of the recognition; and a speech recognition unit (118) for creating an instruction for the apparatus (200) based on recognized speech items of the speech signal (117). As a consequence, the speech control unit (100) is more selective for those parts of the audio signals for speech recognition which correspond to speech items spoken by the user (U1).